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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/030,241	04/11/2002	Rossano Amadelli	205,439	5847

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10/08/2003

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EXAMINER

BOSS, WENDY L

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 10/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/030,241

Applicant(s)

AMADELLI ET AL.

Examiner

Wendy Boss

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 62-105 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 62-76 and 79-105 is/are rejected.
- 7) ☒ Claim(s) 77 and 78 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6. 6) ☐ Other:

DETAILED ACTION

Claim Objections

1. Claims 64, 65, 81, 82, 98 and 99 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The claims do not further limit the subject matter of the previous claims because the previous claims require that the metal ion is chosen from groups I-VA, or the lanthanide or actinide series of the periodic table; however, claims 64, 65, 81, 82, 98 and 99 include other materials (scandium, yttrium, vanadium, niobium, zirconium) which do not belong to any of the above groups.
2. Claim 97 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 97 does not further limit the subject matter of the previous claim because claim 96 already establishes that the metal ion is chosen from groups I-VA, and the lanthanide or actinide series of the periodic table, and mixtures thereof.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 62-72 and 96-105 are rejected under 35 U.S.C. 102(b) as being anticipated by FR 2753980.

The reference discloses a method for preserving the original appearance of a product from the action of atmospheric agents, characterized in that the surfaces of the products are treated with colorless colloidal preparations of titanium dioxide (see page 1, line 11-17; and page 1, line 34-page 2, line 26). The reference further discloses that the preparations of titanium dioxide or one of its precursors contain ions selected from the group consisting of magnesium, cerium, niobium, and lanthanum (see page 3, lines 12-19), as recited in claims 63-65. It is also disclosed in the reference that the preparations of titanium dioxide or one of its precursors contain the metal ion in an amount from 0.1 to 25% (see page 3, lines 12-19), which encompasses the ranges recited in claims 66 and 67. At page 2, lines 18-21, it appears that the entire portion (at least 75%) of titanium dioxide is in the form of anatase. The reference does not necessarily disclose that the preparations use titanium dioxide precursors such as TiCl_4 , TiOSO_4 , and titanium alkoxide, or that the precursor is able to produce titanium dioxide with appropriate types of thermal treatment; however, the claims only require that the preparation include titanium dioxide or one of its precursors.

5. Claims 79, 80 and 87-91 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 0590477.

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The reference discloses a cementitious, stone, or marble product, characterized in that it is coated with a colloidal preparation of titanium dioxide or one of its precursors (see column 3, lines 24-27; and column 4, lines 1-26). The reference also discloses that a preparation of titanium dioxide or one of its precursors contains a metal ion chosen from groups I-VA, and the lanthanide or actinide series of the periodic table, and mixtures thereof (see column 4, lines 1-16). It is also disclosed in the reference that the preparation of titanium dioxide has the function of oxidant for polluting substances including organic substances present in the environment, and inorganic compounds (see column 9, lines 45-58). The reference does not necessarily disclose that the preparations use titanium dioxide precursors such as TiCl_4 , TiOSO_4 , and titanium alkoxide, or that the precursor is able to produce titanium dioxide with appropriate types of thermal treatment; however, the claims only require that the preparation include titanium dioxide or one of its precursors.

The reference does not necessarily disclose that the preparation of titanium dioxide is for the oxidation of nitrogen oxides; however, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

6. Claims 96-100 and 105 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,698,205 (Brückner et al.).

Brückner discloses a process for the creation of colorless colloidal preparations of titanium dioxide or of one to its precursors containing a metal ion chosen from groups I-VA, and the lanthanide or actinide series of the periodic table, and mixtures thereof, characterized in that

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the hydrolysis of the titanium dioxide precursors takes place directly in the presence of the salt of the metal ion by co-precipitating or mixing and characterized in that the metal ion is present in an amount of from 0.1 to 20% (see column 2, lines 38-43; and column 3, lines 31-35), which encompasses the ranges recited in claims 96, and 100. The reference also discloses that the metal ion is chosen from groups I-VA, the lanthanide, or actinide series of the periodic table, and may be lanthanum. It is also disclosed in the reference that the titanium-dioxide precursor may be TiCl_4 (see column 4, lines 10-38), as recited in claim 105.

7. Claims 79-84, 87-91, 94 and 95 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,595,813 (Ogawa et al.).

Ogawa discloses a cementitious, stone, or marble product, characterized in that it is coated with a colloidal preparation of titanium dioxide or one of its precursors (see column 3, lines 14-43). The reference also discloses that the preparation of titanium dioxide or one of its precursors contains a metal ion such as niobium in an amount from 0.01-20 % (see column 3, lines 25-35). It is also disclosed in the reference that the titanium-dioxide precursor may be titanium alkoxide (see column 3, lines 35-43). It is also disclosed in the reference that the preparation of titanium dioxide has the function of oxidant for polluting substances including organic substances present in the environment, and inorganic compounds (see column 7, line 56 through column 8, line 3).

The reference does not necessarily disclose that the preparation of titanium dioxide is for the oxidation of nitrogen oxides; however, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in

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order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

The reference also does not specifically disclose that the titanium dioxide is applied on the product in small successive amounts until the desired thickness is reached, or that it is vacuum-dried; however, patentability of an article depends on the article itself and not the method used to produce it (see MPEP 2113).

8. Claims 62, 63, 66-76, 79, 80, 83-97 and 100-105 are rejected under 35 U.S.C. 102(e) as being anticipated by US 2002/0016250 (Hayakawa et al.).

Hayakawa discloses a method for preserving the original appearance of cementitious, stone, or marble product from the action of atmospheric agents, characterized in that the surfaces of the products are treated with colorless colloidal preparations of titanium dioxide or one of its precursors (see paragraphs 0056, 0079 and 0080). Hayakawa also discloses a cementitious, stone, or marble product, characterized in that it is coated with a colloidal preparation of titanium dioxide or one of its precursors (see paragraphs 0056, 0079 and 0080). The reference also discloses that the preparation of titanium dioxide or one of its precursors contains a metal ion chosen from groups I-VA of the periodic table (see paragraph 0098-0105). It is also disclosed in the reference that the preparation of titanium dioxide or one of its precursors contains the metal ion in an amount from 1-95 % (see paragraph 0103), which overlaps the ranges recited in claims 66, 67, 83 and 84. Hayakawa also discloses that the entire amount (at least 75%) of titanium dioxide may be in the form of anatase, depending on the temperature used (see paragraph 0095). The titanium-dioxide precursor used in the reference may be TiCl_4 , or titanium alkoxide (see paragraphs 0088-0091), as recited in claims 72 and 89. The reference also discloses that the

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preparation of titanium dioxide or one of its precursors has the function of oxidant for polluting substances present in the environment (see paragraph 0219 and 0220). It is disclosed in paragraph 0140 of the reference that the titanium dioxide in colloidal form is prepared using sol-gel techniques and has a mean particle size of 100 Å. The reference also discloses a process for the creation of colorless colloidal preparations of titanium dioxide or of one to its precursors containing a metal ion chosen from groups I-VA, and the lanthanide or actinide series of the periodic table, and mixtures thereof, characterized in that the hydrolysis of the titanium dioxide precursors takes place directly in the presence of the salt of the metal ion by co-precipitating or mixing and characterized in that the metal ion is present in an amount of from 1-95% (see paragraph 0100).

The reference does not necessarily disclose that the preparation of titanium dioxide is for the oxidation of nitrogen oxides; however, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art.

The reference also does not specifically disclose that the titanium dioxide is applied on the product in small successive amounts until the desired thickness is reached, or that it is vacuum-dried; however, patentability of an article depends on the article itself and not the method used to produce it (see MPEP 2113).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 73 and 74 rejected under 35 U.S.C. 103(a) as being unpatentable over FR 2753980 in view of WO 98/05601 (Cassar).

FR 2753980 discloses a method for preserving the original appearance of a product from the action of atmospheric agents as shown above in paragraph number 4. The reference does not necessarily disclose that the method is for the oxidation of polluting substances including motor vehicle exhaust, industrial emissions, inorganic compounds, or nitrogen oxides; however, attention is directed to page 10, lines 1-14 of Cassar, which teaches that it is well known in the art that titanium dioxide provides photocatalytic action for oxidation of inorganic pollutants and nitrogen oxides. Such a teaching would have motivated one having ordinary skill in the art to use the method of FR 2753980 for the oxidation of polluting substances including motor vehicle exhaust, industrial emissions, inorganic compounds, or nitrogen oxides.

Allowable Subject Matter

11. Claims 77 and 78 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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12. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record does not disclose or suggest a method for preserving the appearance of cementitious, stone, or marble product from the action of atmospheric agent, characterized in that a colorless colloidal preparation of titanium dioxide or one of its precursors is applied on the product in small successive amounts until the desired thickness is reached, or that the colloidal preparation is vacuum-dried.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wendy Boss whose telephone number is 703-306-5922. The examiner can normally be reached on M-Th 8:30a-6:00p; 2nd F 8:30a-5:00p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on 703-308-3822. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Wendy Boss